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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,590	01/13/2006	William G. Lutz	63119A	2341
109 7590 02/22/2008 The Dow Chemical Company Intellectual Property Section P.O. Box 1967 Midland, MI 48641-1967				
EXAMINER FISCHER, JUSTIN R				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/564,590

Applicant(s)

LUTZ ET AL.

Examiner

Justin R. Fischer

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1,112,326 (newly cited) and further in view of Zharov (EP 1,029,906, of record). As best depicted in Figure 1, GB '326 is directed to a method of bonding a pipe/spigot 5 and a socket or fitting comprising a bell 2. The reference further teaches that the respective components, which are formed of synthetic thermoplastic materials, are adhesively bonded (Page 1, Lines 9-18 and Lines 80-90). The reference, however, is completely silent with respect to the makeup of the adhesive composition. Zharov, on the other hand, is directed to an adhesive composition comprising a boron containing initiator that provides suitable adhesion between low surface energy substrates that are otherwise difficult to bond (Paragraph 54). One of ordinary skill in the art at the time of the invention would have been particularly motivated to use the adhesive of Zharov in the bonding method of GB '326 since the method of GB '326 is broadly directed to the class of synthetic thermoplastic materials, which include the well known polyolefin materials described by GB '326. It is emphasized that the method of GB '326 includes the bonding of polyethylene or polypropylene pipes, which are recognized as low surface energy substrates in view of Zharov. Absent any conclusive

showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the adhesive composition of Zharov in the bonding method of GB '326.

Regarding claims 4 and 5, the respective components are defined as synthetic thermoplastic materials.

With respect to claims 6-9, polypropylene and polyethylene are recognized as common thermoplastic materials used in the piping industry- a fair reading of GB '326 suggests bonding methods using a variety of known thermoplastic materials, including polypropylene and polyethylene. It is further noted, with respect to claim 6, that GB '326 provides an exemplary embodiment in which the respective components are formed of polyvinyl chloride. Additionally, pipe joining methods commonly involve different materials- one of ordinary skill in the art at the time of the invention would have readily appreciated using the method of GB '326 with similar or dissimilar materials.

As to claim 10, the amine component of the organoborane amine complex of Zharov can be a primary alkyl diamine or a secondary alkyl diamine and such a construction is seen to satisfy "a polyamine having primary or secondary amines".

Regarding claim 14, the adhesive composition of Zharov includes a decomplexing agent, such as a Lewis acid (Paragraph 35).

As to claim 15, the adhesive composition of Zharov can include an isocyanate-containing compound (Paragraph 44). It is further noted that the claim as currently drafted does not require each of the listed components (evidenced by the language or mixtures thereof).

With respect to claim 16, as noted above, the adhesive of Zharov is a polymerizable acrylic monomer (Paragraph 37).

Regarding claims 17-19, the socket includes a bell portion or expanded portion comprising an annular groove or gap. It is evident from Figure 1 that the adhesive flows, to some degree, in the gap. With specific respect to claim 19, the annular groove can be viewed as a channel in the bell.

As to claims 20 and 21, while the references fail to define the amount of VOC emissions, one of ordinary skill in the art at the time of the invention would have expected the method of GB '326 in view of Zharov to demonstrate similar emissions to that of the claimed invention (a function of using an extremely similar adhesive composition).

3. Claims 1-10, 12, and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '326 and further in view of Webb (US 2003/0120005, newly cited). As best depicted in Figure 1, GB '326 is directed to a method of bonding a pipe/spigot 5 and a socket or fitting comprising a bell 2. The reference further teaches that the respective components, which are formed of synthetic thermoplastic materials, are adhesively bonded (Page 1, Lines 9-18 and Lines 80-90). The reference, however, is completely silent with respect to the makeup of the adhesive composition. Webb, on the other hand, is directed to an adhesive composition comprising a boron containing initiator that provides suitable adhesion between low surface energy substrates that are otherwise difficult to bond (Paragraph 10). One of ordinary skill in the art at the time of the invention would have been particularly motivated to use the adhesive of Webb in the

bonding method of GB '326 since the method of GB '326 is broadly directed to the class of synthetic thermoplastic materials, which include the well known polyolefin materials described by GB '326. It is emphasized that the method of GB '326 includes the bonding of polyethylene or polypropylene pipes, which are recognized as low surface energy substrates in view of Webb. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the adhesive composition of Webb in the bonding method of GB '326.

Regarding claims 4 and 5, the respective components are defined as synthetic thermoplastic materials.

With respect to claims 6-9, polypropylene and polyethylene are recognized as common thermoplastic materials used in the piping industry- a fair reading of GB '326 suggests bonding methods using a variety of known thermoplastic materials, including polypropylene and polyethylene. It is further noted, with respect to claim 6, that GB '326 provides an exemplary embodiment in which the respective components are formed of polyvinyl chloride. Additionally, pipe joining methods commonly involve different materials- one of ordinary skill in the art at the time of the invention would have readily appreciated using the method of GB '326 with similar or dissimilar materials.

As to claims 10 and 12, Webb discloses a plurality of the claimed amine complexes (Paragraphs 45-47).

Regarding claim 14, the adhesive composition of Webb includes an isocyanate decomplexing agent (Paragraph 66). It is further noted that the claim as currently

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drafted does not require each of the listed components (evidenced by the language or mixtures thereof).

With respect to claim 16, as noted above, the adhesive of Webb can be a polymerizable acrylic monomer (Paragraph 67).

Regarding claims 17-19, the socket includes a bell portion or expanded portion comprising an annular groove or gap. It is evident from Figure 1 that the adhesive flows, to some degree, in the gap. With specific respect to claim 19, the annular groove can be viewed as a channel in the bell.

As to claims 20 and 21, while the references fail to define the amount of VOC emissions, one of ordinary skill in the art at the time of the invention would have expected the method of GB '326 in view of Webb to demonstrate similar emissions to that of the claimed invention (a function of using an extremely similar adhesive composition).

4. Claims 1-10 and 12-21 are rejected under 35 U.S.C. 103(a) as being obvious over GB '326 and further in view of Sonnenschein (US 6,777,512, of record)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed

in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

As best depicted in Figure 1, GB '326 is directed to a method of bonding a pipe/spigot 5 and a socket or fitting comprising a bell 2. The reference further teaches that the respective components, which are formed of synthetic thermoplastic materials, are adhesively bonded (Page 1, Lines 9-18 and Lines 80-90). The reference, however, is completely silent with respect to the makeup of the adhesive composition. Sonnenschein, on the other hand, is directed to an adhesive composition comprising a boron containing initiator that provides suitable adhesion between low surface energy substrates that are otherwise difficult to bond (Column 2, Lines 34-45). One of ordinary skill in the art at the time of the invention would have been particularly motivated to use the adhesive of Sonnenschein in the bonding method of GB '326 since the method of GB '326 is broadly directed to the class of synthetic thermoplastic materials, which include the well known polyolefin materials described by GB '326. It is emphasized that the method of GB '326 includes the bonding of polyethylene or polypropylene pipes, which are recognized as low surface energy substrates in view of Sonnenschein. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at

the time of the invention would have found it obvious to use the adhesive composition of Sonnenschein in the bonding method of GB '326.

Regarding claims 4 and 5, the respective components are defined as synthetic thermoplastic materials.

With respect to claims 6-9, polypropylene and polyethylene are recognized as common thermoplastic materials used in the piping industry- a fair reading of GB '326 suggests bonding methods using a variety of known thermoplastic materials, including polypropylene and polyethylene. It is further noted, with respect to claim 6, that GB '326 provides an exemplary embodiment in which the respective components are formed of polyvinyl chloride. Additionally, pipe joining methods commonly involve different materials- one of ordinary skill in the art at the time of the invention would have readily appreciated using the method of GB '326 with similar or dissimilar materials.

As to claims 10 and 12, Sonnenschein discloses a plurality of the claimed amine complexes (Column 10).

Regarding claim 14, the adhesive composition of Sonnenschein includes an isocyanate containing complexing agent (Column 11, Lines 30-40). It is further noted that the claim as currently drafted does not require each of the listed components (evidenced by the language or mixtures thereof).

With respect to claim 16, as noted above, the adhesive of Sonnenschein can be a polymerizable acrylic monomer (Column 11, Lines 55+).

Regarding claims 17-19, the socket includes a bell portion or expanded portion comprising an annular groove or gap. It is evident from Figure 1 that the adhesive

flows, to some degree, in the gap. With specific respect to claim 19, the annular groove can be viewed as a channel in the bell.

As to claims 20 and 21, while the references fail to define the amount of VOC emissions, one of ordinary skill in the art at the time of the invention would have expected the method of GB '326 in view of Sonnenschein to demonstrate similar emissions to that of the claimed invention (a function of using an extremely similar adhesive composition).

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (JP 11311392, of record) and further in view of Zharov. Yamaguchi is directed to a method of adhesively bonding a repair patch to a surface of a pipe. The reference further teaches that the adhesive system should be one that bonds well with polyethylene pipes/linings (Paragraphs 10 and 11- as obtained from USPTO translator). While the reference fails to identify any specific adhesives, Zharov suggests the use of the claimed adhesives when bonding low surface energy substrates, such as polyethylene. As such, one of ordinary skill in the art at the time of the invention would have found it obvious to use the adhesive of Zharov in the bonding method of Yamaguchi.

Response to Arguments

6. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's arguments on Page 14 (directed towards claim 10), the organoborane amine complex of Zharov is seen to satisfy (a iv). As set forth above, the

amine component of Zharov can be a primary alkyl diamine or a secondary alkyl diamine and such a construction is seen to satisfy "a polyamine having primary or secondary amines".

With respect to claim 15, the respective components are listed in the alternative-
the claims do not require each of the listed components.

As to claim 22, applicant argues that Yamaguchi discloses only a butyl rubber adhesive. The examiner respectfully disagrees. The reference is more broadly directed to adhesive materials having a high degree of bondability with the substrate of the pipe being repaired, such as polyethylene (see attached translation). Thus, one of ordinary skill in the art at the time of the invention would have been amply motivated to use the adhesive of Zharov in the repair method of Yamaguchi since said method involves the repair of polyethylene pipes, which are recognized as being low surface energy substrates.

Applicant further contends that using Zharov's adhesive in Yamaguchi's method would not work since the repair sheet would bond to the protective film (adhesive would have cured and would not bond to the pipe surface to be repaired). First, the use or nonuse of a protective film would be a direct function of the location at which said repair is being carried out. It is evident that the method would function properly without a protective film if the repair was being carried at a location directly adjacent the storage of the repair material. Second, as is conventional in bonding substrates, Zharov (Paragraph 56) recognizes the ability to apply adhesive to both substrates being bonded (in this case, the damaged pipe and the repair material). As such, one of ordinary skill

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in the art at the time of the invention would have found it obvious to use the adhesive composition of Zharov in the repair method of Yamaguchi.

In conclusion, each of Zharov, Webb, and Sonnenschein disclose adhesive compositions that provide a high degree of adhesion between substrates having low surface energy, such as polyethylene and polypropylene. One of ordinary skill in the art at the time of the invention would have found it obvious to use the respective adhesive compositions in a wide variety of applications involving low surface energy substrates, including pipe joining and repair methods, there being no conclusive showing of unexpected results.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer
/Justin R Fischer/
Primary Examiner, Art Unit 1791